

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 H04B1/16 H04Q7/32

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 H04Q H04B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 289 228 B1 (CORKE ROBERT J ET AL) 11 September 2001 (2001-09-11)	1, 14
Y	column 7, line 5 - line 33 figures 2,3	1, 3-6
X	EP 1 328 066 A (FUJITSU LTD) 16 July 2003 (2003-07-16)	1, 2, 7, 8, 14-16
Y	column 2, line 23 - line 27  column 7, line 18 - line 40 figures 1,2	10-13, 17-20
X	EP 0 361 350 A (NIPPON ELECTRIC CO) 4 April 1990 (1990-04-04)	1, 14
Y	column 1, line 25 - line 42 figure 3	2
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

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Name and mailing address of the ISA

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 104 937 A (FUJIMOTO SHIGERU) 15 August 2000 (2000-08-15) column 2, line 38 - line 56 column 4, line 2 - line 10 figure 1	1,14
Y	US 6 243 399 B1 (SMITH JOSEPH MARK ET AL) 5 June 2001 (2001-06-05) column 2, line 37 - line 43 column 5, line 26 - line 37 column 6, line 33 - line 39 figure 1A	2
Y	US 6 600 907 B1 (TAGUCHI MOTOYASU) 29 July 2003 (2003-07-29) claim 5	3,10,17
Y	US 6 259 724 B1 (ESMAILZADEH RIAZ) 10 July 2001 (2001-07-10) column 5, line 35 - line 41 figures 4,7	4,11,18
Y	EP 0 797 308 A (TSUBOCHI KAZUO) 24 September 1997 (1997-09-24) column 3, line 23 - line 27	5,6,12, 13,19,20
Y	US 6 532 228 B1 (BURGESS PAUL ET AL) 11 March 2003 (2003-03-11) column 1, line 7 - line 11 column 2, line 30 - line 39	1

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 6289228	B1	11-09-2001	BR 0002978 A	13-03-2001
			CN 1281319 A ,C	24-01-2001
			DE 10035062 A1	01-03-2001
			FR 2796795 A1	26-01-2001
			GB 2354911 A ,B	04-04-2001
			JP 2001069072 A	16-03-2001
			SG 85200 A1	19-12-2001
EP 1328066	A	16-07-2003	JP 2003209616 A	25-07-2003
			CN 1433180 A	30-07-2003
			EP 1328066 A2	16-07-2003
			US 2003133337 A1	17-07-2003
EP 0361350	A	04-04-1990	JP 2087834 A	28-03-1990
			JP 2805767 B2	30-09-1998
			CA 1306013 C	04-08-1992
			DE 68924027 D1	05-10-1995
			DE 68924027 T2	25-01-1996
			EP 0361350 A2	04-04-1990
			KR 9310170 B1	15-10-1993
			US 5031231 A	09-07-1991
US 6104937	A	15-08-2000	JP 9247035 A	19-09-1997
			AU 720272 B2	25-05-2000
			AU 1516297 A	11-09-1997
			CA 2199441 A1	08-09-1997
			NL 1005457 C2	02-04-2002
			NL 1005457 A1	09-09-1997
US 6243399	B1	05-06-2001	US 5666355 A	09-09-1997
			US 6775531 B1	10-08-2004
			US 2004147277 A1	29-07-2004
			AT 225097 T	15-10-2002
			AT 253785 T	15-11-2003
			AT 225098 T	15-10-2002
			AU 3130595 A	22-02-1996
			DE 1096692 T1	20-09-2001
			DE 1320249 T1	27-11-2003
			DE 69528369 D1	31-10-2002
			DE 69528369 T2	22-05-2003
			DE 69528398 D1	31-10-2002
			DE 69528398 T2	22-05-2003
			DE 69532092 D1	11-12-2003
			DE 69532092 T2	19-08-2004
			DK 1096692 T3	27-01-2003
			DK 1079592 T3	15-03-2004
			DK 775388 T3	27-01-2003
			EP 1079530 A2	28-02-2001
			EP 1083664 A2	14-03-2001
			EP 1083665 A2	14-03-2001
			EP 1096692 A1	02-05-2001
			EP 1079592 A2	28-02-2001
			EP 1320249 A2	18-06-2003
			EP 0775388 A1	28-05-1997
			ES 2182751 T3	16-03-2003
			ES 2208199 T3	16-06-2004
			ES 2198229 T1	01-02-2004
			ES 2182910 T3	16-03-2003

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6243399	B1	FI 971731 A	23-04-1997
		FI 20041115 A	26-08-2004
		FI 20041116 A	26-08-2004
		FI 20041117 A	26-08-2004
		FI 20041118 A	26-08-2004
		FI 20041119 A	26-08-2004
		FI 20041120 A	26-08-2004
		HK 1031965 A1	19-03-2004
		HK 1033513 A1	13-06-2003
		JP 3130049 B2	31-01-2001
		JP 9511882 T	25-11-1997
		JP 2001119338 A	27-04-2001
		PT 1096692 T	31-01-2003
		PT 775388 T	28-02-2003
		WO 9603811 A1	08-02-1996
US 6600907	B1 29-07-2003	JP 3199039 B2	13-08-2001
		JP 2000138654 A	16-05-2000
		CN 1254998 A	31-05-2000
		GB 2358773 A ,B	01-08-2001
		GB 2345416 A ,B	05-07-2000
US 6259724	B1 10-07-2001	AU 720313 B2	25-05-2000
		AU 4732397 A	15-05-1998
		BR 9711928 A	24-08-1999
		CA 2268668 A1	30-04-1998
		CN 1234169 A	03-11-1999
		EP 0932996 A2	04-08-1999
		JP 3471813 B2	02-12-2003
		JP 2001502866 T	27-02-2001
		KR 2000049151 A	25-07-2000
		RU 2213430 C2	27-09-2003
		WO 9818280 A2	30-04-1998
EP 0797308	A 24-09-1997	JP 3299885 B2	08-07-2002
		JP 9261771 A	03-10-1997
		DE 69714634 D1	19-09-2002
		DE 69714634 T2	24-04-2003
		EP 0797308 A2	24-09-1997
		KR 222482 B1	01-10-1999
		US 5995806 A	30-11-1999
US 6532228	B1 11-03-2003	GB 2342009 A	29-03-2000
		AU 6466099 A	10-04-2000
		DE 69919553 D1	23-09-2004
		WO 0018072 A1	30-03-2000
		EP 1116363 A1	18-07-2001